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TOP SECRET	

CONTENTS

The second secon	Page
the contract of the contract o	
Soviets Increasing Their LF/VLF Communications Capability	1
GRAPHICS	
Very Low Frequency Communication Site (Goliath-type)	1
Lorenz Ground-System Installation 'Goliath' following page	1
Soviet High-Power LF/VLF Transmitter Sites	1

Dec 63

- ii -

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SOVIETS INCREASING THEIR LF/VLF
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General Sciences Division
OSI/CIA
The state of the s
A gradual increase in Soviet very low frequency (VLF) communi-
cations capability is shown by the installation of additional antenna
systems for radio transmission at these frequencies. Two new an-
tenna installations recently were observed in Western USSR. A
saw an antenna farm east of Kiev that
appeared to be 'a type used for VLF radio transmission.' It con-
sisted of a definite cluster of high towers, about half of which stood
slightly higher than the others. Such an arrangement is charac-
teristic of most VLF antenna systems, particularly the Goliath
(nickname for World War II VLF installation) pattern, which
apparently is used by the Soviets in all of their VLF antenna designs.
apparently is used by the soviets in all of their vibrantenna designs.
Photographic intelligence of a VLF communications antenna sys-
tem under construction at Vileyka, Belorussia, clearly shows a
which de-
fine the pattern of a ground plane reflector screen characteristic
of the Goliath-type VLF antenna system.
of the Gordan type VEF unterma system.
Since World War II, the Soviets have constructed at least eight
LF/VLF transmitting stations and associated antenna systems.
The first of these was observed by at Kudma,
near Gorkiy, and it was identified as the Goliath antenna
system which had been transported by the Soviets
The Soviet antenna at Kudma appeared to be just about
the same in physical arrangement as the installation, ex-
cept for some slight reduction in the mast heights. Other Soviet

Dec 63

LF/VLF transmitters were later identified and their locations determined by radio direction finding methods, but their physical

characteristics were not determined. (See map.)

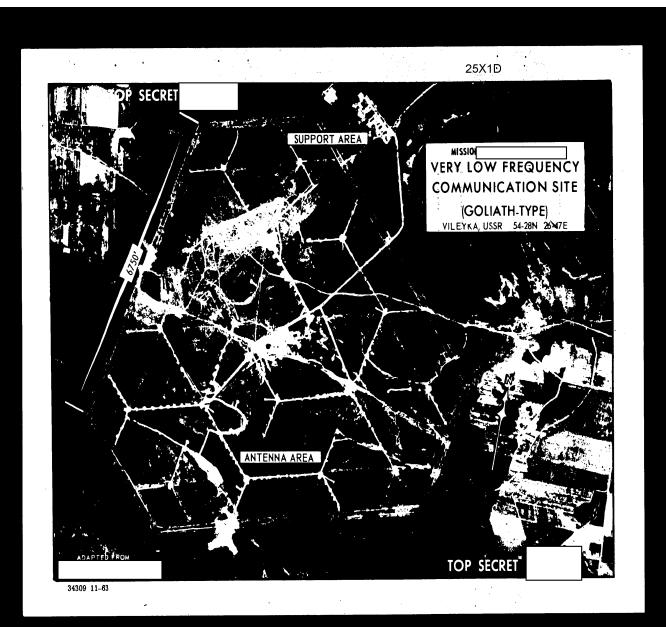
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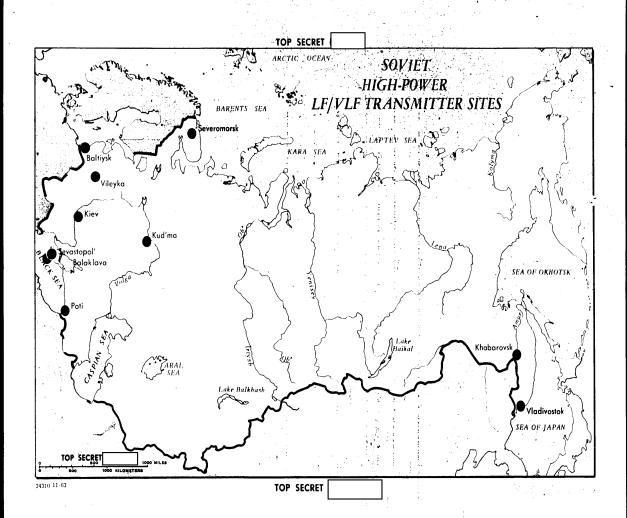
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The photograph of the Vileyka site is the first firm evidence that the Soviets are continuing to use the Goliath-type antenna system pattern for their LF/VLF station antennas. A comparison of the Vileyka system with the original shows they are almost identical. (See sketch.) It is quite likely, therefore, that the Soviets have used the same physical arrangement in the construction of at least some of their LF/VLF antenna systems. It also appears that the Soviets are determined to maintain their advantage over the United States in utilizing very low frequencies for radio communications by continued expansion of their LF/VLF network. At very low frequencies, radio communications serve remarkably well in support of naval operations, because radio signals transmitted at these frequencies are reliably received over very long distances and at short depths below water and ice surfaces.

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Dec 63

- 2 -